

## WHAT IS CLAIMED IS:

1. A stereomicroscope comprising:
  - an objective (6) having an optical axis (6a);
  - a zoom system (8) downstream of the objective, the zoom system
  - 5 having a plurality of axes (9, 8a', 8b', 8c', 8d') wherein at least one of the plurality of axes of the zoom system forms an angle with the optical axis (6a) of the objective;
  - another axis (15) extending substantially parallel to the at least one axis of the zoom system
  - a plurality of deflector elements (10, 12a to 12e), by means of which
  - 10 at least one observation beam emerging from the objective (6) can be guided into the zoom system (8) and at least one observation beam emerging from the zoom system (8) can be guided on to the other axis (15); and
  - at least one optical element (19) on the plurality of axes (9, 8a', 8b', 8c', 8d') of the zoom system and/or on the other axis (15) for extending the beam
  - 15 path of the at least one observation beam in a direction substantially parallel to the at least one axis of the zoom system (8) and/ or to the at least one axis (15) parallel thereto.
2. The stereomicroscope according to Claim 1, wherein the at least one optical element (19) for extending the beam path produces intermediate images of an object
- 20 (24) which is to be observed.
3. The stereomicroscope according to Claim 1, further comprising at least one opto-mechanical component (14a, 14b) provided on the at least one axis of the zoom system (8) and/or on the other axis (15).
4. The stereomicroscope according to Claim 3, wherein the at least one opto-
- 25 mechanical component (14a, 14b) includes a data projecting device.

5. The stereomicroscope according to Claim 3, wherein the at least one opto-mechanical component (14a, 14b) includes an inverter device.
6. The stereomicroscope according to Claim 3, wherein the at least one opto-mechanical component (14a, 14b) includes a laser shutter device.
- 5 7. The stereomicroscope according to Claim 3, wherein the at least one opto-mechanical component (14a, 14b) includes an optical splitter.
8. The stereomicroscope according to Claim 3, wherein the at least one opto-mechanical component (14a, 14b) can be selectively pivoted in and out of the axis on which the at least one opto-mechanical component (14a, 14b) is provided.
- 10 9. The stereomicroscope according to Claim 3, wherein the at least one opto-mechanical component (14a, 14b) can be opto-mechanically removed from the axis on which the at least one opto-mechanical component (14a, 14b) is provided.
10. The stereomicroscope according to Claim 1, wherein the at least one observation beam travels in a direction along the other axis (15) that is opposite to a direction the at least one observation beam travels through the zoom system (8).
- 15 11. The stereomicroscope according to Claim 1, wherein the zoom system (8) comprises at least three magnification/observation channels (8a, 8b, 8c, 8d).
12. The stereomicroscope according to Claim 11, wherein the zoom system (8) comprises four magnification/observation channels (8a, 8b, 8c, 8d).
- 20 13. The stereomicroscope according to Claim 1, wherein the axis (6a) of the objective (6) extends substantially vertically and the at least one axis of the zoom system (8) extends substantially horizontally.

14. The stereomicroscope according Claim 1, wherein the objective (6) is arranged decentrically with respect to the axis (6a).

15. The stereomicroscope according to Claim 1, wherein a beam splitter (26) is mounted between the objective (6) and the zoom system (8).

5 16. The stereomicroscope according to Claim 1, further comprising a data projecting device (22) providing information coupled into at least one observation beam path of the stereomicroscope.